

Energy and Sustainability Curriculum (September 2022)

Required		
<i>Course #</i>	<i>Course Title</i>	<i>Mini-Semester</i>
45-995	Capstone Project (Muller/Telmer)	Fall, Year 2
45-928	Energy Finance (Telmer)	Mini 4
45-978	The Sustainable Business (Muller)	Mini 2
45-820	Finance II (Kuehn)	Mini 1 & 3
Required Electives: choose three		
Suggested		
19-666/45-916	Energy Policy and Economics (Muller)	Mini 4
45-960	Sustainable Operations (Scheller-Wolf)	Mini 3
45-964	Real Options (Secomandi)	Mini 1
Tepper Classes		
45-823	Options (Barraclough)	Mini 1
45-805	Lean Entrepreneurship	Mini 1 & 3
45-807	Commercialization and Innovation Strategy	Mini 1
45-912	Business Analytics and Forecasting (Sowell)	Mini 4
Engineering Classes		
19-977/45-977	Management in Electric Power Systems and Electricity Markets (Moutis)	Mini 3
19-664	Advancing Low Carbon Transition In Industry (Karplus)	Fall Semester
19-627	Special Topics: Energy Innovation and Entrepreneurship (Moutis, proposed)	Mini 3 or 4
39-613	Energy Transport and Storage (Kelly-Pitou)	Mini 2
39-610	Energy Conversion and Supply (Salvador)	Mini 1
39-611	Energy Demand and Utilization	Mini 4
19-625	Sustainable Energy for the Developing World	
19-714/12-714	Environmental Life-Cycle Assessment	
19-717/12-717	Sustainable Engineering Principles	
27-406	Sustainable Materials	
Public Policy Classes (Heinz)		
90-808	U.S. Energy Policy (Kupfer)	Mini 1

Notes:

- **An Interdisciplinary Curriculum!** Tepper class numbers begin with 45 and 47, Engineering class numbers begin with 19 and 39, and Heinz class numbers begin with 90.
- **Student Chosen Electives.** In addition to what is listed above, there are other energy-related courses offered across the CMU campus. They range from engineering classes and climate classes offered by the engineering college, to policy classes at Heinz, to classes offered by the Department of Architecture. Track students may fulfill their required electives with such courses, subject to the permission of the track advisor and the course instructor.

- **Some Popular Electives.** Masters students in the engineering college's *Energy, Science, Technology and Policy* (ESTP) program often take electives that include: 12-712 Sustainable Engineering, 12-714 Environmental Life Cycle Assessment, 19-624 Energy Policy, 19-625 Sustainable Energy for the Developing World and 24-722 Energy System Modeling. A much broader range of energy-related classes available at Carnegie Mellon [is listed here](#).¹
- **Pre-requisites.** It is the responsibility of Tepper students to make sure that their background prepares them for any engineering classes they choose to take. Justin Puglisi (jpuglisi@andrew.cmu.edu) from ESTP has graciously agreed to help students figure out if their backgrounds are suitable.
- **Registration.** The registration process for engineering courses is primarily based upon "first come, first served." Most of the classes listed above are popular among engineering students. It is therefore important to attempt to get registered as early as possible during the registration period.

CT, Sept 2022

¹ <https://www.cmu.edu/energy/get-involved/students/energy-courses/index.html>